

Notice of Allowability	Application No.	Applicant(s)	
	10/040,061	LIN ET AL.	
	Examiner	Art Unit	
	Kevin M Bernatz	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to interview of 6/21/04.
2. ☒ The allowed claim(s) is/are 1-26 and 28.
3. ☒ The drawings filed on 04 January 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☒ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>06252004</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Mr. David McKenzie on June 23, 2004.

The application has been amended as follows:

- Claim 1, line 5: a ";" was inserted after "material";
- Claim 1, line 6: "a" was inserted before the first occurrence of "pinning" and the first occurrence of "layers" was changed to "layer";
- Claim 1, line 7: the second occurrence of "layers" was replaced with "layer having a thickness of at least about 200 Å and"; and
- Claim 1, line 7: after "Ni-Mn films", the phrase "each having a Mn content in the range of about 40 at% and 60 at%" was inserted,
- Claim 14, line 6: "a" was inserted before the first occurrence of "pinning" and the first occurrence of "layers" was changed to "layer";
- Claim 14, line 7: the second occurrence of "layers" was replaced with "layer having a thickness of at least about 200 Å and"; and
- Claim 14, line 7: after "Pt-Mn films", the phrase "each having a Mn content in the range of about 40 at% and 60 at%" was inserted.
- Claim 25, line 2: "150" was replaced with "200";

- Claim 27 was cancelled;
- Claim 28, line 7: “a” was inserted before the first occurrence of “pinning” and the first occurrence of “layers” was changed to “layer”;
- Claim 28, line 8: the second occurrence of “layers” was replaced with “layer having a thickness of at least about 200 Å and”;
- Claim 28, line 9: after “films”, the phrase “each having a Mn content in the range of about 40 at% and 60 at%, the films” was inserted; and
- Claim 28, line 10: “Mn-based” was replaced with “Ni-Mn or Pt-Mn”.

Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c). Specifically, the change in the address for Daniele Mauri.

Reasons for Allowance

4. The present claims are deemed allowable over JP '919 A since JP '919 A fails to disclose or render obvious the unexpected results achieved when forming a spin-valve sensor comprising a pinning layer comprising at least two AFM films selected from the same binary Ni-Mn or Pt-Mn alloy system, wherein the at least two AFM films each have

an Mn content in the range of about 40 to about 60 at% and the entire pinning layer has a thickness of at least about 200 Å.

While JP '919 A disclose a pinning layer comprising at least two AFM films selected from various Mn-based alloys, including embodiments wherein both films are Ni-Mn or Pt-Mn, JP '919 A fail to disclose pinning layers meeting applicants' claimed thickness limitations and further fails to recognize the unexpected improvements shown by applicants' in their as-filed disclosure and the declaration submitted by Mr Lin when using at least two AFM films selected from the same binary Ni-Mn or Pt-Mn alloy system, wherein both films possess a Mn content of 40 – 60 at%.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

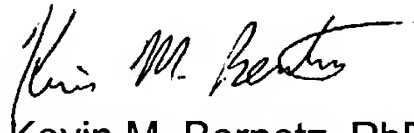
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1773

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Bernatz, PhD
Primary Examiner

June 25, 2004